12450700 COLUMBIA RIVER BELOW WELLS DAM, WA

Upper Columbia Basin
Chief Joseph Subbasin

LOCATION.--Lat 47°56′48″, long 119°51′56″ referenced to North American Datum of 1927, in SW ¼ SE ¼ sec.6, T.28 N., R.24 E., Chelan County, WA, Hydrologic Unit 17020005, at powerhouse of Wells Dam, 0.7 mi northeast of Azwell, and at mile 515.9.
Auxiliary GAGE: Base Lat 47 52′11″, long 119 54′55″, in NW ¼ NW ¼ sec. 2, T. 27 N., R. 23 E., Chelan County, Hydrologic Unit 17020005, on right bank 6.7 mi downstream from Wells Dam and at mile 509.1.

DRAINAGE AREA.--86,100 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1967 to current year. October 1953 to September 1967 (monthly discharge only) in the files of the U.S. Geological Survey.

GAGE.--Daily discharge determined from flow through turbines plus spillway flow when present. Datum of gage is NGVD of 1929 (levels by Bechtel Corporation). Prior to Oct. 1, 1970, at site 0.8 mi downstream at same datum. Oct. 1, 1970, to July 20, 1988, water-stage recorder at present site and datum with auxiliary water-stage recorder 6.8 mi downstream from base gage at same datum.

COOPERATION.--Discharge records provided by Public Utility District No. 1 of Douglas County at Wells Dam through the Corps of Engineers, North Pacific Division, Reservoir Control Center. The U.S. Geological Survey made four discharge measurements at this site during the year.

REMARKS.--Flow regulated by numerous reservoirs. Feeder Canal diversion (station 12435500) for Columbia Basin project is used to irrigate approximately 600,000 acres in the United States. An additional 66,500 acres in Canada are irrigated by other diversions.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--60 years (water years 1954-2013), 114,400 ft³/s, 82,880,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 402,000 ft³/s, June 15, 1972; maximum elevation, 731.92 ft, June 16, 1972; minimum discharge, 17,900 ft³/s, Oct. 5, 1970 (from powerplant records); 12,300 ft³/s measured, February 24, 2010; minimum elevation, 703.55 ft, Sept. 28, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 226,000 ft³/s, June 28; minimum daily discharge, 39,200 ft³/s, Oct. 14.

DISCHARGE MEASUREMENTS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Date	Discharge in ft³/s
Oct. 22, 2012	123,000
Dec. 18, 2012	184,000
Feb. 20, 2013	102,000
Apr. 24, 2013	181,000
Jul. 31, 2013	143,000
Aug. 28, 2013	142,000

Suggested citation: U.S. Geological Survey, 2014, Water-resources data for the United States, Water Year 2013: U.S. Geological Survey Water-Data Report WDR-US-2013, site 12450700, accessed at http://wdr.water.usgs.gov/wy2013/pdfs/12450700.2013.pdf

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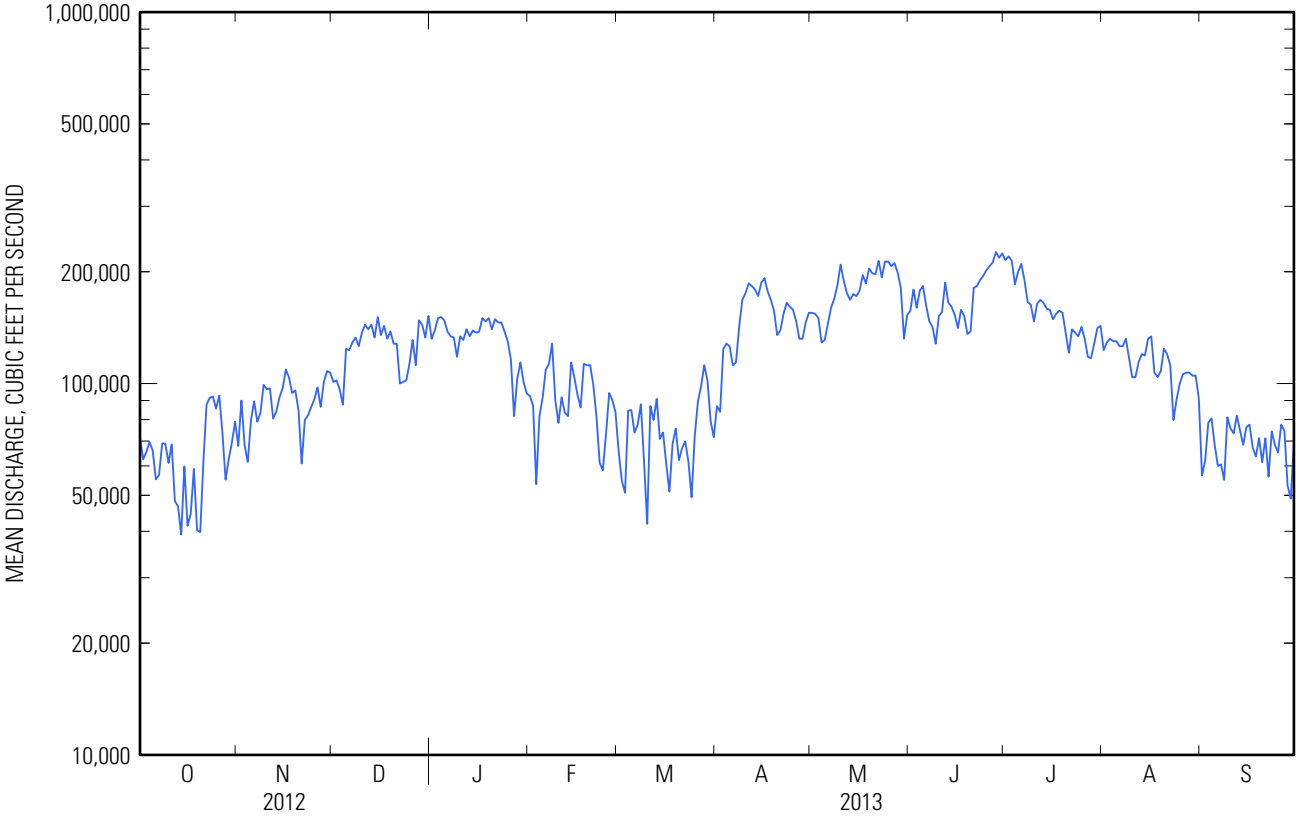
DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[$\times 10^6$, million]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	71,700	67,900	101,000	132,000	92,600	65,500	86,900	155,000	157,000	215,000	123,000	56,600
2	62,500	90,000	102,000	139,000	87,200	54,700	83,900	154,000	179,000	220,000	129,000	62,000
3	65,400	68,200	96,300	150,000	53,600	50,800	124,000	150,000	160,000	214,000	132,000	78,500
4	69,500	61,500	87,700	151,000	81,700	84,600	128,000	129,000	178,000	185,000	130,000	80,500
5	66,100	79,600	124,000	148,000	91,400	84,800	126,000	131,000	183,000	200,000	130,000	68,500
6	55,200	89,600	123,000	138,000	109,000	73,800	112,000	145,000	162,000	210,000	126,000	60,000
7	56,700	78,900	129,000	134,000	113,000	77,500	114,000	160,000	147,000	190,000	126,000	60,600
8	69,000	83,400	133,000	133,000	128,000	87,900	142,000	169,000	142,000	166,000	132,000	55,000
9	68,900	99,200	126,000	118,000	90,200	61,500	168,000	184,000	128,000	163,000	117,000	81,100
10	61,100	96,600	137,000	134,000	78,400	41,900	175,000	209,000	152,000	147,000	104,000	75,700
11	68,500	96,900	144,000	131,000	91,800	87,000	186,000	189,000	156,000	164,000	104,000	73,400
12	48,300	80,500	140,000	140,000	83,600	79,800	183,000	175,000	187,000	168,000	114,000	81,900
13	46,700	84,000	144,000	134,000	81,700	90,900	179,000	168,000	165,000	165,000	120,000	74,800
14	39,200	91,800	133,000	139,000	114,000	70,900	172,000	174,000	161,000	159,000	119,000	68,400
15	59,800	97,100	151,000	137,000	104,000	73,800	187,000	172,000	153,000	158,000	132,000	76,300
16	41,400	109,000	135,000	138,000	93,300	60,800	192,000	178,000	141,000	149,000	134,000	77,500
17	44,600	104,000	143,000	150,000	86,200	51,200	177,000	196,000	158,000	154,000	107,000	67,200
18	58,900	94,300	132,000	147,000	113,000	68,800	168,000	186,000	152,000	157,000	104,000	63,600
19	40,300	95,800	138,000	150,000	112,000	75,600	157,000	204,000	136,000	155,000	108,000	71,300
20	39,800	84,700	128,000	140,000	112,000	62,200	135,000	198,000	138,000	137,000	124,000	61,400
21	61,600	60,900	128,000	149,000	99,100	67,000	139,000	197,000	181,000	121,000	120,000	71,200
22	87,700	79,800	100,000	146,000	81,300	69,900	154,000	214,000	183,000	140,000	112,000	56,100
23	91,600	82,100	101,000	146,000	61,200	61,600	165,000	193,000	190,000	137,000	79,800	74,300
24	92,200	86,400	102,000	138,000	58,400	49,400	161,000	213,000	195,000	134,000	90,700	68,400
25	85,600	90,700	113,000	130,000	73,000	72,400	158,000	213,000	202,000	142,000	100,000	65,200
26	92,800	97,600	131,000	116,000	94,300	89,500	147,000	207,000	207,000	132,000	106,000	77,500
27	73,800	86,500	112,000	81,700	90,300	98,400	132,000	211,000	212,000	118,000	107,000	74,600
28	55,100	101,000	148,000	103,000	83,600	112,000	132,000	199,000	226,000	117,000	107,000	53,100
29	62,600	108,000	144,000	114,000	---	102,000	146,000	181,000	218,000	128,000	105,000	49,000
30	69,400	107,000	133,000	101,000	---	79,300	155,000	132,000	224,000	141,000	105,000	69,200
31	79,000	---	152,000	94,000	---	71,700	---	153,000	---	143,000	91,200	---
Total	1,985,000	2,653,000	3,911,000	4,101,700	2,557,900	2,277,200	4,484,800	5,539,000	5,173,000	4,929,000	3,538,700	2,052,900
Mean	64,030	88,430	126,200	132,300	91,350	73,460	149,500	178,700	172,400	159,000	114,200	68,430
Max	92,800	109,000	152,000	151,000	128,000	112,000	192,000	214,000	226,000	220,000	134,000	81,900
Min	39,200	60,900	87,700	81,700	53,600	41,900	83,900	129,000	128,000	117,000	79,800	49,000
Ac-ft	3,937,000	5,262,000	7,757,000	8,136,000	5,074,000	4,517,000	8,896,000	10.99×10^6	10.26×10^6	9,777,000	7,019,000	4,072,000

	Calendar Year 2012	Water Year 2013
Total	51,638,100	43,203,200
Mean	141,100	118,400
Max	301,000	226,000
Min	38,300	39,200
Ac-ft	102,400,000	85,690,000

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